

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re

Patent Application of

Anthony J. DeGregoria, et. al.

Filed: concurrently herewith

"INTEGRATED HEAT RECOVERY
VENTILATOR - HEPA FILTER"

I, Marilyn S. Jorenby, hereby certify that this correspondence is being deposited with the US Postal Service as first class mail in an envelope addressed to Assistant Commissioner for Patents, Washington, D.C. 20231, on the date of my signature.

Marilyn S. Jorenby
Signature
March 19, 2001
Date of Signature

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

Sir:

This Preliminary Amendment is being filed concurrently with a continuation application for U.S. Serial No. 08/893,833 (hereinafter, the "parent application"). Please enter the following changes to the claims and remarks related thereto into the record of the subject application prior to formal examination thereof.

IN THE CLAIMS

Please cancel claims 1-7 and 12-18.

Substitute the following claims for the corresponding numbered claims in the application.

8. (Amended) A heat recovery ventilator for use in a room, comprising a housing, two blowers, at least two stationary regenerative heat exchangers, a shaft, a single rotating air switch mounted on said shaft, a motor for driving said blowers and said shaft, one of said blowers for forcing a stale airstream out of the room, the other of said blowers for forcing a fresh airstream into the room, said air switch, in use, alternately imparting the stale airstream from one said blower to a regenerative heat exchanger, then imparting the fresh

airstream to that same heat exchanger and through said other blower, when said air switch rotates in a 180° turn, such that during operation, said air switch rotates in a single direction.

19. (Amended) A housing for a heat recovery ventilator having a single rotating air switch which, during operation, operates in a single direction, said air switch having a pair of opposing side plates, a plurality of regenerative heat exchangers, a fresh air blower, a stale air blower, a motor for driving the blowers and the air switch, said housing comprising:

- (a) a first compartment containing a stale air blower, said first compartment having a plurality of openings therein for providing for a stale airstream from an indoor climate to flow into said first compartment,
- (b) a second compartment containing the fresh air blower and the motor, said second compartment adjacent said first compartment, said second compartment having a plurality of openings therein for providing for a fresh airstream to flow out of said second compartment and into the indoor climate,
- (c) a third compartment generally parallel to and adjacent to both said first and second compartments, said third compartment containing said rotating air switch, said first and third compartments having a common opening there between for the stale airstream to flow from said first compartment into said third compartment, and into a stale air passageway in the rotating air switch, said third compartment having a common opening to said second compartment disposed in communication with an opening in one of said opposing side plates of the rotating air switch, and
- (d) a fourth compartment generally parallel to and adjacent to said third compartment, said fourth compartment generally parallel to and spaced from both said first and second compartments by said third compartment, said fourth compartment containing the regenerative heat exchangers, said fourth compartment having a common opening to said third compartment through which the other opposing side plate of the rotating air switch is in communication, said fourth compartment having a plurality of openings permitting the fresh airstream to flow into the regenerative heat exchangers from an outdoor climate and the stale airstream to flow out of the regenerative heat exchangers into the outdoor climate.

21. (Amended) A method of providing indoor ventilation using a heat recovery ventilator having stationary rectangular regenerative heat exchangers, two blowers, one rotating air switch which, during operation, rotates in a single direction, a motor for driving the blower and air switch, all disposed in a housing, the housing having stale air openings for allowing a stale airstream to enter the housing and fresh air openings for allowing fresh air to exit from said housing, the method comprising the steps of:

- (a) forcing a stale airstream from an indoor climate into the housing,
- (b) blowing the stale airstream into the rotating air switch,
- (c) transporting the stale airstream from the rotating air switch into the stationary rectangular regenerative heat exchangers,
- (d) simultaneously exchanging heat and moisture from the stale airstream onto the regenerative heat exchangers and forcing the stale airstream to flow out of the housing,
- (e) forcing fresh air into the housing and through the same regenerative heat exchangers,
- (f) exchanging heat and moisture on the regenerative heat exchangers into the fresh airstream,
- (g) forcing the fresh airstream, which is heated and moisturized, into the rotating air switch and through the fresh air blower, and
- (h) forcing the fresh airstream, which is heated and moisturized, out of the housing and into the indoor climate.

24. (New) A heat recovery ventilator for use in a room, comprising a housing, two blowers, at least two stationary regenerative heat exchangers, a shaft, a single continuously rotating air switch mounted on said shaft, a motor for driving said blowers and said shaft, one of said blowers for forcing a stale airstream out of the room, the other of said blowers for forcing a fresh airstream into the room, said air switch, in use, alternately imparting the stale airstream from one said blower to a regenerative heat exchanger, then imparting the fresh airstream to that same heat exchanger and through said other blower, when said air switch rotates in a 180° turn.

25. (New) A method of providing indoor ventilation using a heat recovery ventilator having stationary rectangular regenerative heat exchangers, two blowers, one continuously rotating air switch, a motor for driving the blower and air switch, all disposed in a housing, the housing having stale air openings for allowing a stale airstream to enter the housing and fresh air openings for allowing fresh air to exit from said housing; the method comprising the steps of:

- (a) forcing a stale airstream from an indoor climate into the housing,
- (b) blowing the stale airstream into the rotating air switch,
- (c) transporting the stale airstream from the rotating air switch into the stationary rectangular regenerative heat exchangers,
- (d) simultaneously exchanging heat and moisture from the stale airstream onto the regenerative heat exchangers and forcing the stale airstream to flow out of the housing,
- (e) forcing fresh air into the housing and through the same regenerative heat exchangers,
- (f) exchanging heat and moisture on the regenerative heat exchangers into the fresh airstream,
- (g) forcing the fresh airstream, which is heated and moisturized, into the rotating air switch and through the fresh air blower, and
- (h) forcing the fresh airstream, which is heated and moisturized, out of the housing and into the indoor climate.

REMARKS:

Pursuant to this Preliminary Amendment, claims 1-7 and 12-18 have been cancelled, claims 8, 19 and 21 have been amended and claims 24 and 25 have been added. Accordingly, claims 8-11 and 19-25 remain pending in the subject application.

Claims 8, 19 and 21 have been amended to recite that the single rotating air switch rotates in a single direction during operation (see, e.g., page 23, lines 2-9 for support for the amendments to the claims). As set forth in the specification (e.g., page 28, lines 12-16), a rotating air switch which rotates in a full 360 degree continuous rotation according to the present invention, advantageously simplifies the operation of an HRV as compared to prior art devices utilizing periodic acute angled back/forth rotation. It is respectfully submitted that none of the prior art of record teaches or suggests a rotating air switch which, during

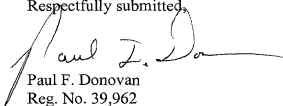
operation, rotates in a single direction. Thus, independent claims 8, 19 and 21 are allowable. Claims 9-11, 20 and 22-23 depend on one of independent claims 8, 19 and 21 and should, therefore, be allowable for the same reasons applied thereto and for the additional subject matter recited in each.

New claims 24 and 25 have been added to the subject application. New claims 24 and 25 each recite a continuously (i.e., non-stopping), rotating air switch. Support for a continuously rotating air switch can be found, e.g., at page 28, lines 12-16, of the subject application. It is respectfully submitted that none of the art of record teaches a single continuously rotating air switch as recited in new claims 24 and 25. Accordingly, claims 24 and 25 are allowable.

Consideration and allowance of claims 8-11 and 19-25 is respectfully requested.

In the event there are any issues that can be resolved by telephone conference, the Examiner is invited to telephone the undersigned at the number indicated below.

Respectfully submitted,



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Version With Markings To Show Changes Made

Claims 1-7 and 12-18 have been cancelled.

New claims 24-25 have been added.

8. (Amended) A heat recovery ventilator for use in a room, comprising a housing, two blowers, at least two stationary regenerative heat exchangers, a shaft, a single [continuously] rotating air switch mounted on said shaft, a motor for driving said blowers and said shaft, one of said blowers for forcing a stale airstream out of the room[:], the other of said blowers for forcing a fresh airstream into the room, said air switch, in use, alternately imparting the stale airstream from one said blower to a regenerative heat exchanger, then imparting the fresh airstream to that same heat exchanger and through said other blower, when said air switch rotates in a 180° turn, such that during operation, said air switch rotates in a single direction.

19. (Amended) A housing for a heat recovery ventilator having a single [continuously] rotating air switch which, during operation, operates in a single direction, said air switch having a pair of opposing side plates, a plurality of regenerative heat exchangers, a fresh air blower, a stale air blower, a motor for driving the blowers and the air switch, said housing comprising:

- (a) a first compartment containing a stale air blower, said first compartment having a plurality of openings therein for providing for a stale airstream from an indoor climate to flow into said first compartment,
- (b) a second compartment containing the fresh air blower and the motor, said second compartment adjacent said first compartment, said second compartment having a plurality of [an] openings therein for providing for a fresh airstream to flow out of said second compartment and into the indoor climate,
- (c) a third compartment generally parallel to and adjacent to both said first and second compartments, said third compartment containing said rotating air switch, said first and third compartments having a common opening there between for the stale airstream to flow from said first compartment into said third compartment, and into a stale air passageway in the rotating air switch, said third compartment having a common opening to said second compartment disposed in communication with an opening in one of said opposing side plates of the rotating air switch, and
- (d) a fourth compartment generally parallel to and adjacent to said third compartment, said fourth compartment generally parallel to and spaced from both said first and second compartments by said third compartment, said fourth compartment containing the regenerative heat exchangers, said fourth compartment having a common opening to said third compartment through which the other opposing side plate of the rotating air switch is in communication, said fourth compartment having a plurality of openings permitting the [air] fresh airstream to flow into the regenerative heat exchangers from an outdoor climate and the stale airstream to flow out of the regenerative heat exchangers into the outdoor climate.

21. (Amended) A method of providing indoor ventilation using a heat recovery ventilator having stationary rectangular regenerative heat exchangers, two blowers, one [continuously] rotating air switch which, during operation, rotates in a single direction, a motor for driving the blower and air switch, all disposed in a housing, the housing having stale air openings for allowing a stale airstream to enter the housing and fresh air openings for allowing fresh air to exit from said housing[;], the method comprising the steps of:

- (a) forcing a stale airstream from an indoor climate into the housing,
- (b) blowing the stale airstream into the rotating air switch,
- (c) transporting the stale airstream from the rotating air switch into the stationary rectangular regenerative heat exchangers,
- (d) simultaneously exchanging heat and moisture from the stale airstream onto the regenerative heat exchangers and forcing the stale airstream to flow out of the housing,
- (e) forcing fresh air into the housing and through the same regenerative heat exchangers,
- (f) exchanging heat and moisture on the regenerative heat exchangers into the fresh airstream,
- (g) forcing the fresh airstream, which is heated and moisturized, into the rotating air switch and through the fresh air blower, and
- (h) forcing the fresh airstream, which is heated and moisturized, out of the housing and into the indoor climate.